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ABSTRACT

The realities of current fiscal environments faced by most public higher education institutions, budgeting problems, and three appropriate roles that institutional researchers can perform while assisting campus budget and academic staff compete for resources are discussed. Several major themes that flow through the budgeting process concern: incrementalism, politics, and technocracy. Three roles for institutional research are: (1) establishing and maintaining multipurpose data bases for budget articulation and defense, (2) providing leadership and counsel for state-level special issues analyses, and (3) providing technical support and guidance in the development of a resource allocation formula. In the process of performing these three roles, institutional researchers can play a vital role in interjecting performance analysis into the budgeting process. (SW)

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# INSTITUTIONAL RESEARCH AND BUDGETING: APPROPRIATE RELATIONSHIPS

A Discussion Paper for
AIR 1979 Forum
San Diego, California

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## ABSTRACT

After a modest beginning prior to World War II, institutional research reached respectability by the mid-1960's through the introduction of computerized data handling, operations research techniques, and systems analyses procedures. Many processes developed in the 1960's, however, were growth-oriented and have received unfavorable publicity because of misuse or premature utilization by administrators and legislatures. The 1970's have been earmarked by the use of educational cost accounting along the more traditional lines of expenditure control rather than effective use of resources. Institutional researchers have found it necessary to become more involved in the "bloody business of budgeting" as institutions strive to protect their funding base while competing for scarce resources.

This paper discusses the realities of current fiscal environment faced by most public institutions, describes briefly the "staff warfare" elements in budgeting, and suggests three appropriate roles which institutional researchers can perform while assisting campus budget and academic staff compete for resources: (1) Establishing and Maintaining Multi-Purpose Data Bases for Budget Articulation and Defense, (2) Providing Leadership and Counsel for State-Level Special Issue Analyses, and (3) Providing Technical Support and Guidance in the Development of Resource Allocation Formulae. The paper concludes by suggesting that, in the process of performing the three roles, institutional researchers can play a vital role in interjecting performance analysis into the budgetary process.

## I. Background

Institutional research in higher education began in the years prior to World War II. From that period until the late 1950's, campus institutional research functions performed a secondary role on the nations' campuses.

During the same period, campus-based researchers developed and refined techniques in organizational development, cybernetics, computer science, management systems, and systems analysis which were widely employed in private industry.

By the early 1960's these techniques were being introduced into the operational areas of campuses. The decade of the 1960's reflected not only explosive growth in student populations but also the introduction of computer techniques and systems analyses designed to plan and control growth. By the mid 1970's, massive computer simulation models such as CAMPUS and RRPM were being used to develop campus master plans. Large scale data collection and comparison efforts were being utilized by state-level agencies to understand and budget for higher education. Institutional research had come of age and had assumed a place of recognition in the campus scheme of things.

As the 1970's draw to a close, however, institutional researchers often appear to be confused and without clear direction. With enrollment growth disappearing and the growth-oriented computer techniques of the 1960's no longer looked upon with favor, the institutional researcher is being forced to adapt to simultaneous needs for large-scale, heavily aggregated state-level planning efforts and the difficult, day to day handling of fiscal and educational retrenchment.

This paper discusses the realities of current fiscal constraints and the appropriate roles for the institutional researcher in the new age of educational cost accounting and fiscal retrenchment.

## II. The Realities of the Budgeting Process

Several major themes flow through the budgeting process:

1. Incrementalism: Budgeting for higher education is largely incremental. In general, the best forecast of next year's budget is this year's budget. The review process focuses upon the costs associated with maintaining the current budget base before adjusting for enrollments or new programs. The requesting agency usually attempts to enrich the budget base by creating new budget divisions, using comparison data generally favoring the agency, indulging in budgetary "end runs," and attempting to demonstrate superior staff work at all times.

2. Politics: The budgetary process is very political. In each state, several agencies and special interest groups compete for scarce public resources. Successful agency heads cultivate and expand their constituency, work hard at developing the confidence of public officials, develop advisory committees to champion their budget requests, carefully time the introduction of glamorous new budget categories, and know when to threaten the cutting of popular programs when the budget is in danger.

3. Technocracy: Budgeting can be (and usually is) very technical. Agency and appropriation committee staffs engage in a sophisticated (and adversarial) dialogue where "compensation," "line item variances," "violation of legislative intent," "appropriated and non-appropriated funds," "interagency fund transfers," "revenue sharing," "expenditure authority," and "non-reoccurring supplemental appropriations" all create a mass of confusion to the uninitiated. When the modern management tools of MBO, zero-based budgeting, program budgeting, and performance analysis became visible in the 1960's, entirely new vocabularies were added to the already cluttered jargon used in "budgeteering."

Legislators and agencies now rely upon their staffs to provide the vital understanding of what is going on in order to best employ the most effective fiscal and political equations when requesting or appropriating funds.

## III. Staff Warfare in Incrementalism

The age of cost benefit analysis, large scale computer manipulation of data, and special issue analyses has subtly but significantly changed the manner in which incremental budgeting is implemented. Raw political power--while still the "bottom line" in most appropriating processes--now shares the stage with highly technical staff activity which tends to "design" the battlefield upon which the major political confrontations are resolved.

The "battlefield designs" come from the results of "interim" study committees, special issue analyses, and formula budgeting efforts. These activities frequently lead to phased resource reallocations, priority realignments, retrenchment of budget base, and basic adjustments in faculty and staff workload expectations. In Colorado, for example, the period from 1976 has seen the development of basic funding formulae for faculty, library staff and acquisitions, physical plant staff, and capital outlay (movable equipment). During the same period the statewide program offering mix in the disciplines education and nursing as well as the budget category capital outlay have been zero-based. Two more disciplines are slated for zero-based review and all the remaining major budget categories are expected to be funded by appropriate formulae by 1980-81. Campus, governing board, coordinating agency, executive staff, and legislative staffs are all engaged in the above-described efforts.

## IV. Institutional Research and Staff Warfare

In parallel with the aforementioned activities is the annual (or biennial) "bloody business of budgeting." Legislators come and go, and each new committee chairperson usually arrives on the scene with a personal agenda. Requesting agencies often discover old agreements and understandings "do not bind the current legislature," and must frequently scramble to quickly answer questions coming from all directions and to defend positions long assumed to be credible. A quick perusal of the Chronicle and major domestic newspapers reveals that during the past few years, higher education

has had to vigorously defend itself over such matters as the difference between a major research university and a "standard" state college, basic elements of faculty work load, the value of liberal arts, the relationship between student access to programs and program duplication, the right to use institutionally collected funds, and threats of legal action over long-accepted techniques of budget flexibility.

Again, an example can be found in Colorado where, in a span of eight weeks, twelve major responses were developed to counteract several legislatively inspired public policy initiatives generally unfavorable to the university. The list, in summary form, is shown in Table A. These studies, responses, etc., were put together by a coalition of institutional researchers, budget staff, and campus faculty and administrators. The process required that position papers and fact sheets be developed for several different types of constituencies and adversary groups. Technical responses went to legislative budget staff. Public policy responses (with budget detail) went to budget committee members. General explanatory material went to other legislators and to friends of the university who in turn wrote of their general observations to the legislature. By early April every member of both houses of the legislature had received technical, policy, general, and constituent input from several sources. The results, at the time of printing of this paper, are that all of the major cutbacks originally proposed for the university have been rolled back. In the process, a largely inexperienced legislature tacitly admitted that there was much to learn about access, quality, and diversity in postsecondary education, and the university learned that it must do a far better job describing what it is all about.

TABLE A

Analyses Organized and Presented By a Coalition of Faculty, Budget Staff, Academic Administrators and Campus Institutional Researchers

January - March, 1979*

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- Changes in Tax Dollar Support for Major State Agencies 1970-1978
- AAU Comparison Analysis (Per Student):
  - Appropriations
  - Tuition Revenue
  - Government Contracts
  - Gifts and Grants

  (Revenue Criteria)
  - Instructional Expenditures
  - Research Expenditures
  - Public Service Expenditures

  (Expenditure Criteria)
  - Tuition as % of Total Instructional Expenditures
- Several Papers, Letters, etc., explaining the Concept of Student Access and the Concept of Role/Scope/Mission Differentiation between Campuses
- Demonstration of the Continued Validity of a School of Education
- Point by Point Technical and Political Responses to Legislative Budget Committee Questions or Allegations:
  - Impact of faculty position reductions
  - Validity and reliability of legislative Faculty Productivity Study
  - Technical and educational aspects of forced student enrollment reductions
  - Reduction in student aid
  - Impact of campus based federal research upon regional economy and upon curriculum
  - Cost to state taxpayer per FTE student (State of Colorado 20 campus comparison)
  - Admissions standards of first matriculants
  - Explanation of enrollment statistics and their relation to state funding support
- Survey of freshmen to determine their second choice college--if they had not attended the University

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## V. Role of Institutional Research in Budgeting

It has been noted that budgeting is both a technical and a political process. Mature, professional communication links with several constituencies and a variety of governmental agencies and legislative committees must be established and maintained. Professional budget staff have their own language. The vocabulary of academics is perhaps even more arcane. The institutional researcher, whose duty it is to describe the campus in such a way that role and mission are developed and validated for educational and budgetary purposes, must learn the vocabulary of both campus groups and the nomenclature of reviewing and appropriating agencies.

It would appear, therefore, that the institutional researcher could be the communication "bridge" between academe, budget staff, and the state-level appropriating agencies. This bridge could manifest itself in an over-all increased ability for the university or college to explain itself to the very groups whose support it needs for survival. Explaining the campus in a broad spectrum of areas, from policy to technical matters, constitutes an overall performance profile which could impact, in a positive manner, the appropriations process. Institutional researchers can enhance this process by several means:

### 1. Establish and Maintain a Multipurpose Data Base

In order to answer a variety of questions from constituents, staff, and legislators, a multi-purpose data base should be established and maintained. I.R. staff should be able, on very short notice, to work with academic and budget personnel to answer questions. Table B displays

an abridged but representative data base. The potential effectiveness of the data base may be judged by assessing its usefulness with respect to budget request articulation and by reviewing the questions asked by members and staffs of the executive and legislative branches of government during the last budget cycle. For example, public service performed and student recruitments (and success) data by congressional district can prove valuable in winning over support of a reluctant legislator. Also, the ability to respond quickly and professionally to questions coming from executive and legislative staffs can serve to build positive images concerning the running of the campus.

2. Provide Leadership and Counsel for Special Issues Analyses

Legislators frequently place interim study requirements in appropriation measures, and executive staffs often require special studies before resources are given to campuses. These studies are usually concerned with the viability of a professional program (or the degree of duplication) or the effectiveness of a specific type of educational delivery system (i.e., allied health, outreach, extension programs, etc.). On occasion, statewide studies are performed to validate basic budgetary information such as reported enrollments. If an institution is not careful, these studies can be performed by individuals who do not have an operational understanding of what they are analyzing, or at a minimum have fundamentally different priorities or values than the

TABLE B

Representative Multipurpose Data Base

Student Data

- First time matriculants
  - Residents: By county
    By age group
    Typical student workloads
  - NonResidents: By Region
    Typical workloads
- Transfer students (use above breakdown)
- Student majors by type
- Degrees awarded by type
- Student outcomes-Placements (see NCHEMS taxonomy)
- Student aid by type related to the various categories of students shown above
- Admissions data (high school rank, etc.) related to various categories of students/peers

Campus Data

- Degree programs offered
- Budgets by school or college
- Sources of funds by type
- Economic impact of campus operations
  - Upon the community
  - Upon the region
  - Upon the state
- Expenditures per student
  - Total appropriation
  - State tax dollars
  - Tuition
  - Indirect cost recoveries
  - Campus peer group comparisons
- Service programs
- Facility/equipment adequacy
- Student demand--# applicants

Faculty Data

- Numbers of faculty by discipline, tenure, and age
- Workload
  - Student credits produced
  - Student contact hours
  - Research time
  - Public service hours
  - Class Preparation
- Salary levels
  - By rank and discipline
  - By workload
  - By years within rank
- Role/Mission--In technical terms
  --In lay person language
  --As it relates to each congressional district
- Public Service performed
  - By campus--as it relates to each congressional district
- Development of fiscal and academic training modules for campus administrators
- Comparisons with campus peer groups
- Faculty accomplishments--recognition awards, publishing, research projects; faculty expertise profiles, etc.

agency being analyzed. Educational analyses are frequently performed using only budget staff from a campus--leaving the academic portion unaware of what is going on until the study has been completed and the funding patterns have begun to change.

It is imperative that individuals trained in systems analysis and possessing a basic understanding of the academic and budgetary processes be involved in the special analyses because alterations in campus or state level policy (or the level of public commitment) frequently follow the special analysis effort. Again, institutional research personnel can perform this role given personal motivation and campus commitment.

3. Provide Technical Support and Guidance in the Development of Budgetary Formulae

Because the outcomes of zero-based, performance, and programmatic studies are usually implemented within the ongoing budget process, the implementation is largely incremental. A favorite tool for incrementally implementing many aspects of special studies is a formula (or a series of formulae) which generally reflects (in a quantitative way) the outcomes or recommendations of the study. The resulting formula becomes critical because it will be used by appropriating agencies in the most uniform way possible (i.e., it will be applied to all institutions, regardless of role or mission) because of the political necessity to treat everyone "the same way." Therefore, the formula must measure what it

purports to measure, must use available data, must be sufficiently flexible to cover all roles and missions, must work from standard definitions, and must be understood by non-technical personnel.

Successfully meeting all these criteria requires the ability to communicate and adapt to a variety of conditions and expectations. Institutional researchers are well-equipped to ensure the validity and reliability of budgetary formulae. Their presence on formula design teams would appear to be both logical and necessary for successful completion of the tasks. For example, suppose it became necessary to articulate faculty productivity in such a manner that budgetary decisions consistent with diverse campus roles and missions could be made by legislative and executives bodies even if the appropriating bodies understood very little about faculty productivity or campus role/mission. The presence of institutional research personnel on the formula task force could provide:

1. The experimental design for survey and analysis.
2. The organizing force to maintain appropriate communication between academic personnel and the budget staff of the campus and the appropriating bodies.
3. The processes by which the formula could be simulated, field tested, and monitored in an operational appropriations process.
4. The processes by which the formula could be modified as needs and priorities change over time.

In conclusion, the current fiscal constraints being imposed upon higher education call for careful, professional, and politically viable processes to manage retrenchment, resource reallocation and budget base defense. Meaningful articulation of campus role and mission within the dynamics of the budgetary process would constitute the introduction of campus performance in the resource allocation process.

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